



# Cashflowing Agroforestry

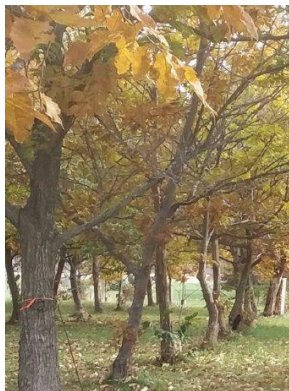
## CASE STUDY: RED FERN FARM

Tom Wahl and Kathy Dice started Red Fern Farm near Grandview, Iowa with the purchase of 55 acres in 1986. Since that time, the farm has grown to 86 acres and is the site of ongoing research on a variety of tree crops and forest farming systems. Today, Red Fern Farm is a renowned U-Pick farm specializing predominantly in chestnuts with additional offerings of several varieties of fruit, nuts and seedlings. The diverse landscape includes paw paws, heartnuts, persimmons, and honeyberries. In 2020, Tom and Kathy protected their farm with a Sustainable Iowa Land Trust conservation easement that will keep it in perennial agriculture for generations to come.

Over the years, Tom and Kathy have honed their operation and their products to create an economically and environmentally sustainable fruit and nut business. Most of the land was formerly in row crop production, but it still took two incomes from off-farm jobs over several years before Red Fern Farm was profitable enough on its own.

### MOTIVATION

Tom and Kathy both have degrees in Fisheries and Wildlife Biology from Iowa State University and both worked for Iowa Department of Natural Resources and the Natural Resources Conservation Service of the USDA over the years. This work brought to light the fact that most of the problems natural resource professionals work to correct are a direct result of modern-day agriculture. Tom was exposed to Holistic Resource Management in 1990, and that really got the gears grinding. Together the couple formulated some goals, including showing that a family farm could produce enough income — enough to not need off-farm jobs — on just a few acres, and without causing many of the same problems as conventional agriculture. They designed their farm with polycultures and perennials and wanted to serve as a successful example for others to copy.



### A HAPPY ACCIDENT

Chestnuts happened to be the first crop Tom and Kathy decided to try, and this has been a very successful endeavor. Tom says that since the first chestnuts were planted in 1990, he has tried to grow each tree crop he's learned about that would fit their climate. Red Fern Farm now has about 75 fruit and nut species.

Successful chestnut establishment begins with the soil. A deep, fertile, well-drained acidic soil will be well-suited for this system. A turf-type perennial ryegrass, creeping red fescue, and Dutch white clover make a good ground cover that does not require a lot of mowing. Using a 20x20 ft. spacing for planting chestnut trees will equate to planting 108 trees/ac. Paw paws can be planted in the chestnut rows (at the same density as chestnuts), between the trees, and this system has been very successful for Red Fern Farm. Tom and Kathy added honeyberries to this polyculture system as well, though they aren't mature enough to produce yet

Tree shelters and irrigation for the trees, which have a higher water use requirement the first few years, help improve establishment. Red Fern Farm installed irrigation in 2013, and never needed to use it again until 2019. With the return on investment, the irrigation system will pay for itself.

### LIVESTOCK INTEGRATION

Tom and Kathy spent 25 years trying to integrate goats into their Agroforestry system, but it was not meant to be. Goats love to nibble on young trees and they'll take any measure to get there. Currently, there are sheep grazing around the trees. The sheep eat honeyberry bushes, which is problematic, but ignore paw paws. The chestnut trees are big enough now not to be harmed. Tom and Kathy used to keep chickens with a coop and portable electric netting they moved weekly. Now they've integrated their chickens with their sheep, using a portable chicken shelter they move daily when they take the sheep to fresh grass.



# Cashflowing Agroforestry

## CASE STUDY: RED FERN FARM

### CASHFLOWING AGROFORESTRY LESSONS

- Start small.
- Don't quit your day job.
- Get a high-paying job and spend minimal time at it or
  - Get a job related to farming (low-paying) that you love to help build skills and share tools with
- Save money and invest it in your land/farm
- Minimize debt where you can.
  - Find land trust or other affordable land
  - Learn basic car, home and tractor repair at a local community college
  - Attend free field days, get on-farm internships or volunteer on farms
  - Buy used vehicles and second-hand clothes
  - Use only half of the off-farm income you bring in, and invest the rest in your land or savings
- Grow what you like to eat, so you can be enthusiastic when you share it with others.
- Make your farm where you want to vacation and vacation there.
- Expect to take up to 10 years to make a reliable profit.
- Visit your USDA office and learn what federal programs can help such as Tree and Shrub establishment, Fence, Ponds, Hoop houses and more.
- Partner with nonprofits you love for grants that help you establish and demonstrate your system.
- Get educated about farm taxes and deductions.
- Stack enterprises on fewer acres by interplanting chestnuts and paw paws, for example, or using tree shelters and electric netting to protect young trees while letting sheep mow the grass and chickens control pests.
- The cost of the appraisals may not be worth it to you, but the tax incentives for permanent protection may help offset farm profits in later, successful years.



## Red Fern Farm

### CASHFLOW HIGHLIGHTS

Using the U-pick model to keep expenses low for their primary crops, Tom and Kathy report the following highlights:

#### Paw paws

- ½ Acre first planted 2001. Originally at 216 trees/acre. Now at 108/acre.
- Additional trees planted 2005-08
- Dry weather and no irrigation early on slowed down production
- U-pick started 2014 (original ½ acre)
- Income 2015 - \$1,133 (young trees)
- Income 2021 - \$7,804 (mature trees)

#### Chestnuts

- Mature trees producing 5,000 lbs./acre selling at \$2.75 to \$3/lb.
- Mowing takes an estimated 60 seconds per mature tree. (Longer for young trees.)
- U-pick started in 2014 - prior to this, chestnuts were harvested by Red Fern Farm, with more expenses
- U-pick Income 2015 - \$7,746
- U-pick Income 2021 - \$27,007 with more trees producing each year.

Note: Income varies widely based on soils, age of trees, management and marketing.

### Don't want customers walking around your farm?

**Expect these additional expenses:** harvesting, sanitation, sorting, refrigeration, packaging and shipping. If selling wholesale, expect to receive less revenue per pound.

**Expect these lower expenses:** no public on-farm bathroom and handwashing facilities, no scheduling customers and orienting them to the orchard upon arrival and lower liability insurance.